

PHILOSOPHICAL TRANSACTIONS.

Monday, August 17. 1668.

The Contents.

A Contrivance to make the Picture of any thing appear on a Wall, Cup-board, or within a Picture-frame, &c. in the midst of a Light room in the Day-time; or in the Night-time in any room that is lightened with a considerable number of Candles. An Extract of a Letter, written from Leiden by Mr. Sam. Colepreps to the Publisher, about the making of counterfeited Opal, and the Recovery of the Art of making Red-glafs. Some Animadversions written in a Letter by Dr John Wallis to a printed Paper entituled, Responsio Francisci Du Laurens ad Epistolam D. Wallisii ad Cl. Oldenburgium scriptam. An Account of two Books. I. REGNERI de GRAEF MEd. D. DE VIRORUM ORGANIS GENERATIONI INSERVIENTIBUS. II. LOGARITHMOTECNIA NICOLAI MERCATORIS: discoursed of in a letter written by Dr. J. Wallis to the Lord Vis-count Brouncker; at whose desire the same Doctor in another Letter demonstrates his Method of Finding the Summ of Logarithmes. To which is added Mr. Mercatois illustration of his said Logarithmotechnia.

A Contrivance

To make the Picture of any thing appear on a Wall, Cup-board, or within a Picture-frame, &c. in the midst of a Light room in the day-time; or in the Night-time in any room that is lightened with a considerable number of Candles; devised and communicated by the Ingenious Mr. Hook, as follows;

THis Optical Experiment, here to be described, is New, though easy and obvious; and hath not, that I know, been ever made by any other person this way. It produces Effects not
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onely very delightful, but to such as know not the contrivance, very wonderful ; so that Spectators, not well versed in *opticks*, that should see the various Apparitions and Disappearances, the Motions, Changes, and Actions, that may this way be represented, would readily believe them to be super-natural and miraculous, and would as easily be affected with all those passions of Love, Fear, Reverence, Honour, and Astonishment, that are the natural consequences of such belief. And had the *Heathen* Priests of old been acquainted with it, their Oracles and Temples would have been much more famous for the Miracles of their Imaginary Deities. For by such an Art as this, what could they not have represented in their Temples? Apparitions of Angels, or Devils, Inscriptions and Oracles on Walls ; the Prospect of Countreyes, Cities, Houses, Navies, Armies ; the Actions and Motions of Men, Beasts, Birds, &c. the vanishing of them in a cloud, and their appearing no more after the cloud is vanisht : And indeed almost any thing, that may be seen, may by this contrivance be very vividly and distinctly represented, in such a manner, that, unless to very curious and sagacious persons, the means how such Apparitions are made, shall not be discoverable. The way in short is this ;

Opposite to the place or wall, where the Apparition is to be, let a Hole be made of about a foot in diameter, or bigger, if there be a high Window, that hath a Casement in it, 'twill be so much the better. Without this hole, or Casement open'd at a convenient distance, (that it may not be perceived by the Company in the room) place the Picture or Object, which you will represent, inverted, and by means of Looking-glasses placed behind, if the picture be *transparent*, reflect the rayes of the Sun so, as that they may pass through it towards the place, where it is to be represented ; and to the end that no rayes may pass besides it, let the Picture be encompass'd on every side with a board or cloath. If the Object be a *Statue*, or some living Creature, then it must be very much enlightn'd by casting the Sunbeams on it by Refraction, Reflexion, or both. Between this Object, and the Place where 'tis to be represented, there is to be placed a broad Convex-glass, ground of such a convexity, as that it may represent the Object distinct on the said place ; which
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any one, that hath any insight in the *Opticks*, may easily direct. The nearer it is placed to the object, the more is the Object magnified on the Wall, and the further off, the less; which diversity is effected by Glasses of several spheres. If the Object cannot be *inverted* (as 'tis pretty difficult to do with Living Animals, Candles, &c.) then there must be *two* large Glasses of convenient Spheres, and they plac'd at the'r appropriated distances (which are very easily found by tryals) so as to make the representations *erect* as well as the Object.

These Objects, Reflecting and Refracting Glasses, and the whole Apparatus; as also the Persons employ'd to order, change and make use of them, must be placed without the said high Window or Hole, so that they may not be perceived by the Spectators in the room; and the whole Operation will be easily perform'd.

The particular manner of preparing the Objects, adapting the Glasses, collecting the Rayes of the Sun, varying the Object, making the representations of the Sky (by the help of other Glasses) and of Clouds (by the help of Smoak) &c. I intend, hereafter, when I have leisure and opportunity, more particularly to describe; as also the way, of making a natural *Land-skip*, &c. to appear upon the walls of a *light* room; which will not only be very pleasant, but of great use in painting. Whatsoever may be done by means of the Sun-beams in the day-time, the same may be done with much more ease in the night, by the help of torches, lamps, or other bright lights, plac'd about the Objects, according to the several sorts of them.

So far our Inventor; who hath not contented himself with the bare speculation, but put the same in practice some years since, in the presence of several members of the *R. Society*, among whom the *Publisher* had the good fortune to see the successful performance of what is here answered.

An Extract of a Letter lately written by Mr. S. Colepreffe, from Leiden, to the Publisher, about the making of counterfeited Opal, and the Recovery of the Art of making Red-glas.

SIR, You may perchance remember, that some time since,